

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
11 April 2002 (11.04.2002)

PCT

(10) International Publication Number  
WO 02/029350 A3

(51) International Patent Classification<sup>7</sup>: F41A 19/57

(21) International Application Number: PCT/US01/25605

(22) International Filing Date: 13 August 2001 (13.08.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/230,450 6 September 2000 (06.09.2000) US  
09/718,106 15 November 2000 (15.11.2000) US

(71) Applicant (for all designated States except US): THE UNITED STATES OF AMERICA as represented by THE SECRETARY OF THE ARMY [US/US]; The Pentagon, Washington, DC 20310 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): VAN DYKE-RESTIFO, Stephen, M. [US/US]; 26 McGarr Lane, Voorheesville, NY 12186 (US); MADIGAN, Lisa, J. [US/US]; 118 Malm Road, Melrose, NY 12121 (US).

VOLCOTT, Douglas, F. [US/US]; 39 Jaipur Lane, Saratoga Springs, NY 12866 (US); SCALISE, Dominick [US/US]; 611 Bellinger Avenue, Berkimer, NY 13350 (US).

(74) Agent: SACHS, Michael, C.; U.S. Army ARDEC, Attn: AMSTA-AR-GCL (Building 3), Picatinny Arsenal, Dover, NJ 07806-5000 (US).

(81) Designated States (national): AT, AU, BR, CA, CH, CN, CZ, DE, DK, ES, FI, GB, IL, IN, JP, KR, LU, MX, NO, NZ, PL, PT, RU, SE, SG, TR, US, ZA.

(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

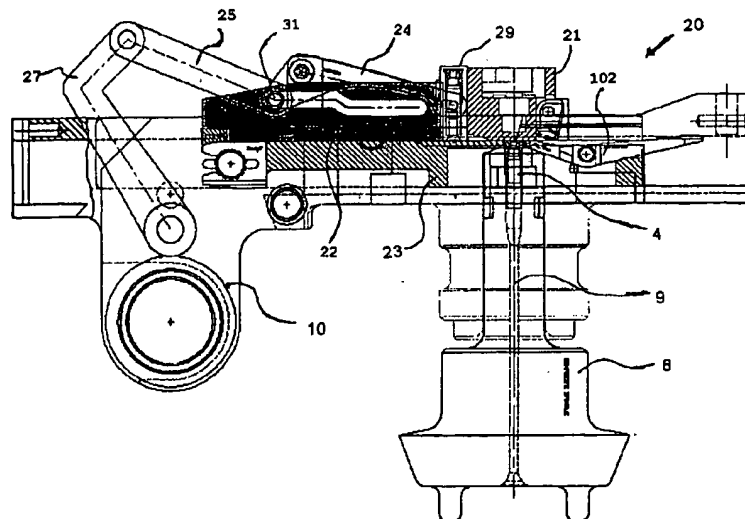
Published:

— with international search report

(88) Date of publication of the international search report:  
17 April 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AUTOMATIC PRIMER FEED MECHANISM



(57) Abstract: An automatic primer feed mechanism (20) for use with a carrier assembly (10) of a large caliber artillery piece, which includes mechanical assemblies for automatic primer loading after full breech closure and allows for spent primer cartridges to be extracted before opening of the breech to maximize safety, thereby allowing the gun crew to perform artillery piece misfire, sticker and check fire operations before the breech is opened. The mechanism (20) includes a body member (23) that mounts the automatic feed mechanism (20) to the carrier (10) of the artillery piece so as to interface with the carrier to position the mechanism on one side of the breech of the artillery piece. The body member (23) includes a cam surface member (22), which provides a path for movement of an injection arm member (24). The tray member (21) has guide rails for engagement with the body, which slides in relation thereto.

WO 02/029350 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JS01/25605

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F41A 19/57  
US CL : 89/27.13, 34

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 89/27.13, 34; 42/49.01, 50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,558,626 A (BARTOLLES) 17 DECEMBER 1985 (17.12.1985), SEE FIGS. 1-5; COL. 3, LINES 49-68 AND COL. 4, LINES 1-68.	11-16
X	US 3,951,041 A (BARTOLLES) 20 APRIL 1976 (20.04.1976), SEE FIGS. 1-7; COL. 2, LINES 54-69 AND COL. 3, LINES 1-67.	11-16
A	US 5,115,716 A (DOERING ET AL.) 26 MAY 1992 (26.05.1992), SEE ENTIRE DISCLOSURE.	1-17
A	DT 1,128,788 A (BARTELS) 26 APRIL 1962 (26.04.1962), SEE ENTIRE DISCLOSURE.	1-17

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

22 November 2002 (22.11.2002)

Date of mailing of the international search report

16 JAN 2003

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Stephen M. Johnson

Telephone No. (703) 306-4158

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/25605

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application; as follows:

- Group I (claims 1-10) drawn to a primer mechanism for an artillery piece classified in claim 89, subclass 27.13
- Group II (claims 11-15) drawn to a cartridge feed mechanism and magazine classified in class 89, subclass 33.1.
- Group III (claims 16-17) drawn to a magazine device classified in class 89, subclass 34.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐  
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.